08-03-04 IFW AF/1616

Attorney's Docket No.: 9105-2IP PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of : Fearghus O'Foghludha Group Art Unit: 1616

Filed: July 11, 2000 Examiner: Michael G. Hartley

Serial No.: 09/614,490

For: **RADIOACTIVE SOURCE MATERIALS FORMABLE INTO VARIOUS SHAPES**

August 2, 2004

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' REPLY BRIEF

PURSUANT TO 37 C.F.R. §1.193(b)(1)

Sir:

This Reply Brief is filed in triplicate to respond to the issues raised by the "Response to Argument" portion of the Examiner's Answer mailed June 3, 2004. Appellant submit that, for at least the reasons discussed in Appellant's Appeal Brief mailed March 30, 2004, and Appellant's clarifications provided below, the pending claims are patentable over the cited references. Appellant incorporates each of the arguments and positions in the Appeal Brief in the present Reply Brief as if set forth fully herein. In the interests of brevity, these arguments and positions will not be reproduced below.

1. Grouping of Claims

The Examiner states in Section 7 of the Examiner's Answer that all the claims should stand or fall together and that it is unclear to the Examiner why Claim 3 (Group II) and Claim 5 (Group III) were grouped separately. Claims 1, 4 and 6-9 are grouped in Group I. Appellant maintains that Claims 3 and 5 are properly grouped separately.

As summarized in the "Issues" section on page 3 of Appellant's Brief, the Examiner has rejected pending Claims 1 and 3-9 based on the following four separate rejections:

1.) Claims 1, 4 and 6-9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,163,896 to Suthanthiran ("Suthanthiran");

2.) Claims 1, 3, 4, and 6-9 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0054851 to Grunze ("Grunze");

3.) Claims 1 and 3-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either one of Suthanthiran or Grunze in view of U.S. Patent No. 6,152,869 to Park ("Park"); and

4.) Claims 1 and 3-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either one of Suthanthiran or Grunze in view of U.S. Patent No. 5,342,283 to Good ("Good").

Rejection 1 does not apply to Claim 3 and Rejections 1 and 2 do not apply to Claim 5. Therefore, Claims 3 and 5 are properly grouped separately and do not stand or fall with Claims 1, 4, and 6-9.

For further clarification, the reasons that Rejection 1 does not apply to Claim 3 are discussed below responsive to the Examiner's Reply Brief with respect to Suthanthiran. Additional reasons for the separate patentability of Claim 3 are also provided. It is also noted that additional reasons for the separate patentability of Claim 5 are provided in Section II.B.2 of Appellant's Brief submitted on March 30, 2004.

2. Suthanthiran

A. Claim 1

The Examiner states on page 6 of the Examiner's Answer that Suthanthiran discloses P-32 polynucleotides. Appellants submit that polynucleotides are not suitable as a polymer in the context of the recitations of Claim 1, and that Suthanthiran does not anticipate or render obvious the recitations of Claim 1 alone or in combination with Park or Good.

Claim 1 of the present application recites a nuclide that "is a chemically bound constituent of the backbone of a polymer of the integral source material, wherein "the integral source material is configured before activation to provide a device." In this context, a polymer according to the present invention is clearly a conventional polymer, such as the polymers recited in Claim 3. A polynucleotide would not be suitable to form a device, such as a test object, rectangular or disc shaped sources configured to radiate an area, radioactive enclosure, flood source, nuclear imaging device, shroud or excitation source for energy-dispersive fluorescence analysis as recited in Claim 1.

As further evidenced by the configurations proposed by Suthanthiran, a polynucleotide is clearly unsuitable as a polymer that is configured to provide a device. Suthanthiran proposes a metal substrate that has a coating as illustrated in Figure 1. Suthanthiran states that the coating material is a radioactive-absorbing material in a binder material. *See* col. 2, lines 64-66. According to Suthanthiran, the coating of radioactive-absorbing material and the binder is typically between about 0.01 mm to about 1.0 mm thick. *See* col. 6, lines 54-59.

The Examiner's reading of Claim 1 to encompass a polynucleotide in a binder material used as a thin coating on a device is overly broad. Under the Examiner's interpretation of Claim 1, a coating of paint would satisfy the recitation of being configured to provide a device. The recitations of Claim 1 clearly do not encompass thin coatings because such materials are not themselves configured to provide a device. In contrast to the thin coatings of polynucleotides in a binder material as proposed by Suthanthiran, the polymers of the present invention can be configured to provide devices that have dimensions that are much greater than the thickness of a millimeter or less discussed in Suthanthiran. For example, as discussed on page 8, lines 15-20 of the specification, an annular ring can be formed that has dimensions of the order of 0.5 to 1 inch interior diameter, 0.75 to 1.25 inch outer diameter, and a thickness of 0.1 to 0.3 inches. *See* paragraph 61.

Accordingly, Claim 1 is not anticipated under § 102 by Suthanthiran. Moreover, the deficiencies of Suthanthiran are not remedied by Park or Good, and therefore, Claim 1 is patentable under § 103 over these references.

B. Claim 3

Claim 3 recites polymers that are suitable for providing a device according to embodiments of the present invention. Even assuming, for the sake of argument, that the Examiner were correct that the polynucleotides of Suthanthiran could provide a device as recited in Claim 1, Suthanthiran does not teach or suggest the polymers recited in Claim 3. Therefore, Claim 3 is separately patentable and should be allowed if rewritten in independent form. Appellant would welcome a telephone call from the Examiner to discuss rewriting Claim 3 in independent form to place the application in condition for allowance.

As noted above, Claim 3 has not been rejected under § 102, but rather, Claim 3 has been rejected under § 103(a) as being unpatentable over Suthanthiran in view of either one of Park or Good. Neither Park nor Good teach or suggest radioactive polymer materials such that the

activated nuclide is a chemically bound constituent of the polymer. For example, Park proposes radionuclides that are dispersed evenly within a polyurethane carrier. *See* Park, col. 4, lines 27-28 and Figure 2. Good proposes a radioactive coating that includes various radioactive elements (*See* Good, col. 6, line 60 – col. 7, line 8) and does not discuss nuclides that are chemically bound constituents of a polymer. Therefore, the deficiencies of Suthanthiran are not remedied by Park or Good, and Claim 3 is separately patentable over the cited references.

3. Grunze

In response to Appellant's arguments that the polymer proposed by Grunze is merely used as a coating material, the Examiner cites page 2, paragraph 22 of Grunze, which states that the polymer can "be used not only as a coating, but even as the complete material in particular applications." *See* Examiner's Answer, page 8, second paragraph. Appellant has not located any other portion of Grunze that discusses the formation of the "complete material" in paragraph 22.

A finding of anticipation or obviousness requires that the cited prior art must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention. Grunze does not disclose how to make and use radioactive polymers other than as thin coating materials. As pointed out in the Appellant's Brief, the examples in Grunze propose coating that are on the nanometer or micrometer scale. It is further unclear how the methods discussed in Grunze could be used to provide a device as recited in Claim 1.

The Examiner also states that "[t]he instant claims do not exclude such coatings." Examiner's Answer, page 8, second paragraph. As discussed with respect to Suthanthiran above, the Examiner's interpretation of Claim 1 as including polymer coatings is overly broad. A coating does not "provide a device" as recited in Claim 1. Moreover, with respect to the rejection under § 103 based on Grunze in view of Park or Good, neither Park nor Good teaches or suggests a nuclide that is a chemically bound constituent of a polymer that is configured to provide a device.

Therefore, Claim 1 is not anticipated by Grunze under § 102 and is not anticipated by Grunze in view of Park or Good under § 103.

In view of Appellant's Brief submitted on March 30, 2004 and the above remarks, Appellant submits that Claims 1 and 3-9 are novel and non-obvious. Accordingly, it is respectfully requested that the Examiner's conclusions be reversed, and that this case be passed to issuance.

Respectfully submitted,

Laura M. Kelley
Registration No. 48,441

Myers Bigel Sibley & Sajovec, P.A.
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401
Customer No. 20792

CERTIFICATE OF EXPRESS MAILING

Express Mail Label No.EV 472535791 US Date of Deposit: August 2, 2004

I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on the date indicated above and is addressed to: Mail Stop Appeal Brief - Patents-Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Rosa Lee Brinson